WHAT IS CLAIMED IS:

1. An apparatus for reducing distortion of a power amplifier, comprising:

a controller that compares a signal fed back from the power amplifier and an input signal and generates at least one of a temperature compensation coefficient and a frequency compensation coefficient based on the comparison; and

a pre-distorter that adjusts the input signal based on the coefficient generated by the digital pre-distorter controller.

2. The apparatus of claim 1, wherein the pre-distorter comprises:

a look-up table that stores the temperature compensation coefficient generated by the controller;

a pre-distorter kernel that compensates the input signal based on the coefficient stored in the look-up table;

an instantaneous power measuring unit that measures an instantaneous power of the input signal; and

an average power measuring unit that measures an average power of an output signal of the instantaneous power measuring unit.

3. The apparatus of claim 2, wherein the look-up table includes a plurality of aligned tables that discriminate a plurality of coefficients by average powers.

4. The apparatus of claim 3, wherein the table includes a plurality of blocks that store respective temperature compensation coefficients which are discriminated based on instantaneous powers.

5. The apparatus of claim 1, wherein the pre-distorter comprises:

a look-up table that stores a plurality of power/phase compensation coefficients applied from the controller;

a pre-distorter kernel that compensates the input signal based on one of the compensation coefficients from the look-up table;

a correction filter that receives the frequency compensation coefficient and compensates for frequency distortion characteristics in a signal output from the pre-distorter kernel; and

an instantaneous power measuring unit that measures an instantaneous power of the input signal.

6. The apparatus of claim 1, wherein the pre-distorter comprises:

a first look-up table that stores the temperature compensation coefficient generated by the controller;

a pre-distorter kernel that compensates the input signal based on the temperature compensation coefficient stored in the first look-up table;

a correction filter that compensates an output signal of the pre-distorter kernel based on the frequency compensation coefficient;

an instantaneous power measuring unit that measures an instantaneous power of the input signal; and

an average power measuring unit that measures an average power of an output signal of the instantaneous power measuring unit.

7. The apparatus of claim 6, wherein the input signal is a narrow-band frequency signal.

8. The apparatus of claim 6 further comprising:

a second look-up table that stores a plurality of frequency compensation coefficients by average powers, if the input signal is a wide-band frequency.

9. The apparatus of claim 6, wherein the first look-up table includes a plurality of aligned tables which discriminate the temperature compensation coefficients by average powers.

10. The apparatus of claim 9, wherein the first look-up table includes a plurality of blocks which store by instantaneous powers the temperature compensation coefficients discriminated by average powers.

11. The apparatus of claim 1, wherein the controller and pre-distorter are digital devices.

12. An apparatus for reducing distortion of a power amplifier comprising:

a digital pre-distorter controller that compares a signal fed back from the power amplifier and an input signal and generates a power/phase compensation coefficient and a temperature compensation coefficient based on the comparison;

an instantaneous power measuring unit that measures instantaneous power of the input signal;

an average power measuring unit that measures average power based on an output signal of the instantaneous power measuring unit;

a look-up table that stores the power/phase compensation coefficient and the temperature compensation coefficient and outputs the compensation coefficients based on the instantaneous power and the average power of the input signal; and

a pre-distorter kernel that compensates the input signal using the power/phase compensation coefficient and the temperature compensation coefficient outputted from the look-up table.

13. The apparatus of claim 12, wherein the look-up table includes a plurality of grouped tables which discriminate the compensation coefficients by average powers.

14. The apparatus of claim 13, wherein the table includes a plurality of blocks storing the compensation coefficients by instantaneous powers.

15. The apparatus of claim 12, wherein the look-up table stores a new power/phase compensation coefficient and a new temperature compensation coefficient generated by the digital pre-distorter controller, updating the previously stored ones.

16. An apparatus for reducing distortion of a power amplifier, comprising:

a digital pre-distorter controller that compares a signal fed back from a power amplifier and an input signal and generates a power/phase compensation coefficient and a frequency compensation coefficient based on the comparison;

an instantaneous power measuring unit that measures instantaneous power of the input signal;

a look-up table that stores the power/phase compensation coefficient and outputting a compensation coefficient based on the instantaneous power of the input signal;

a pre-distorter kernel that compensates the input signal based on the power/phase compensation coefficient stored in the look-up table; and

a correction filter that compensates an output signal of the pre-distorter kernel based on the frequency compensation coefficient stored in the digital pre-distorter controller.

17. The apparatus of claim 16, wherein the look-up table stores the power/phase compensation coefficients by instantaneous powers of an input signal.

18. An apparatus for reducing distortion of a power amplifier, comprising:

a digital pre-distorter controller that compares a signal fed back from a power amplifier and an input signal and generates a power/phase compensation coefficient and at least one of a temperature compensation coefficient and a frequency compensation coefficient based on the comparison;

an instantaneous power measuring unit that measures instantaneous power of the input signal;

an average power measuring unit that generates average power from an output signal of the instantaneous power measuring unit;

a first look-up table that stores the power/phase compensation coefficient and the temperature compensation coefficient and outputs the compensation coefficients according to an instantaneous power and an average power of the input signal;

a pre-distorter kernel that compensates the input signal based on power/phase compensation coefficient and the temperature compensation coefficient output from the look-up table; and

a correction filter that compensates a frequency distortion characteristic of the power amplifier by adjusting an output signal of the pre-distorter kernel based on the frequency compensation coefficient.

19. The apparatus of claim 18, wherein the input signal is a narrow-band frequency signal.

20. The apparatus of claim 18, further comprising:

a second look-up table for storing a plurality of frequency compensation coefficients by average powers, if the input signal is a wide-band frequency signal.

21. The apparatus of claim 18, wherein the instantaneous power and the average power are used as a basis for determining positions where the power/phase compensation coefficient and the temperature compensation coefficient are stored.

22. A method for reducing distortion of a power amplifier, comprising:

determining an instantaneous power level or an average power level based on a training signal;

generating/storing at least one frequency compensation coefficient and at least one temperature compensation coefficient based on instantaneous power or average power levels; and

compensating an input signal according to an instantaneous power or an average power of the input signal.

23. The method of claim 22, wherein the compensating step comprises:

generating an updated frequency compensation coefficient and a new temperature compensation coefficient; and

compensating the input signal based on at least one of the updated coefficients.

24. A method for reducing distortion of a power amplifier, comprising:

determining an instantaneous power and an average power based on a training signal;

generating at least one temperature compensation coefficient based on the instantaneous power and average power;

storing the temperature compensation coefficient with other temperature compensation coefficients in a look-up table;

outputting one of the temperature compensation coefficients stored in the look-up table based on an instantaneous power and an average power of an input signal;

compensating the input signal with the temperature compensation coefficient output from the look-up table; and

re-generating a new temperature compensation coefficient based on the compensated signal.

25. The method of claim 24, wherein the re-generating step comprises:

comparing the compensated signal and the input signal;

generating a new temperature compensation coefficient based on the comparison; and

storing the new temperature compensation coefficient.

26. The method of claim 24, wherein the instantaneous power and the average power are used as addresses of where the temperature compensation coefficient is stored in the look-up table.

27. A method for reducing distortion of a power amplifier, comprising:

generating a frequency compensation coefficient which is inverse to frequency characteristics of a power amplifier;

adjusting an input signal based on the frequency compensation coefficient; and

generating a new frequency compensation coefficient based on the adjusted signal.

28. A method for reducing distortion of a power amplifier, comprising:

generating/storing frequency compensation coefficients based on average power levels of a training signal;

generating/storing temperature compensation coefficients based on instantaneous power and average power of a signal compensated by applying the frequency compensation coefficient;

compensating an input signal by applying one of the temperature compensation coefficients corresponding to an instantaneous power and an average power of the input signal;

compensating the temperature-compensated signal using a corresponding one of the frequency compensation coefficients; and

re-generating a new frequency compensation coefficient and a new temperature compensation coefficient based on a signal fed back from the power amplifier.

29. The method of claim 28, wherein the re-generating step comprises:

comparing the pre-compensated signal and the input signal and generating a new frequency compensation coefficient and a new temperature compensation coefficient based on the comparison; and

storing the new temperature compensation coefficient.

30. The method of claim 28, wherein the frequency compensation coefficients and the temperature compensation coefficients are stored in a look-up table based on instantaneous power or average power levels of signal input to the power amplifier

31. The method of claim 28, wherein the instantaneous power and the average power are used as addresses for storing the frequency compensation coefficients or the temperature compensation coefficients.

32. A method for reducing power amplifier distortion, comprising:

adjusting an input signal based on a temperature of the amplifier; and

inputting the adjusted signal into the amplifier.

33. The method of claim 32, wherein the adjusting step includes:

comparing the input signal to an output signal of the amplifier;

generating a temperature compensation coefficient based on the comparison; and

adjusting the input signal based on the temperature compensation coefficient to reduce a non-linear characteristic of the amplifier.

34. The method of claim 33, wherein adjusting the input signal based on the temperature compensation coefficient includes: modifying the input signal to have a temperature distortion characteristic which is inverse to a temperature distortion characteristic of the power amplifier.

35. The method of claim 32, further comprising:

storing a plurality of temperature compensation coefficients in a storage area based on a corresponding plurality of amplifier power levels;

determining a power of the amplifer; and

locating in the storage area the temperature compensation coefficient used to adjust the input signal based on the amplifier power measurement.

36. A method for reducing power amplifier distortion, comprising:

adjusting an input signal based on an operating frequency of the amplifier; and

inputting the adjusted signal into the amplifier.

37. The method of claim 36, wherein the adjusting step includes:

comparing the input signal to an output signal of the amplifier;

generating a frequency compensation coefficient based on the comparison; and

adjusting the input signal based on the frequency compensation coefficient to reduce a non-linear characteristic of the amplifier.

38. The method of claim 37, wherein adjusting the input signal based on the frequency compensation coefficient includes: modifying the input signal to have a frequency distortion characteristic which is inverse to a frequency distortion characteristic of the power amplifier.

39. The method of claim 36, further comprising:

storing a plurality of frequency compensation coefficients in a storage area based on a corresponding plurality of amplifier power levels;

determining a power of the amplifer; and

locating in the storage area the frequency compensation coefficient used to adjust the input signal based on the amplifier power measurement.

40. An apparatus for reducing power amplifier distortion, comprising:

a detector which detects a temperature of the amplifier; and

a processor which adjusts an input signal based on the temperature of the amplifier.

41. The apparatus of claim 40, wherein the processor includes:

a comparator which compares the input signal to an output signal of the amplifier;

a determining unit which determines a temperature compensation coefficient based on the comparison; and

a kernel which adjusts the input signal based on the temperature compensation coefficient to reduce a non-linear characteristic of the amplifier.

42. The apparatus of claim 41, wherein the kernel modifies the input signal to have a temperature distortion characteristic which is inverse to a temperature distortion characteristic of the power amplifier.

43. The apparatus of claim 40, further comprising:

a storage unit which stores a plurality of temperature compensation coefficients based on a corresponding plurality of amplifier power levels; and

a measurement unit which determines a power of the amplifer, wherein the storage unit outputs the temperature compensation coefficient used to adjust the input signal based on the amplifier power measurement.

44. An apparatus for reducing power amplifier distortion, comprising:

a detector which detects an operating frequency of the amplifier; and

a processor which adjusts an input signal based on the frequency of the amplifier.

45. The apparatus of claim 44, wherein the adjusting step includes:

a comparator which compares the input signal to an output signal of the amplifier;

a determining unit which determines a frequency compensation coefficient based on the comparison; and

a kernel which adjusts the input signal based on the frequency compensation coefficient to reduce a non-linear characteristic of the amplifier.

46. The apparatus of claim 45, wherein the kernel modifies the input signal to have a frequency distortion characteristic which is inverse to a frequency distortion characteristic of the power amplifier.

47. The apparatus of claim 44, further comprising:

a storage unit which stores a plurality of frequency compensation coefficients based on a corresponding plurality of amplifier power levels; and a measurement unit which determines a power of the amplifier, wherein the storage unit outputs the frequency compensation coefficient used to adjust the input signal based on the amplifier power measurement.